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Thermoelectric and Magnetoelectric Behavior in $Gd_5Si_2Ge_2$ and Piezoelectric Laminates NERSESSE NERSESSIAN, student member, SCOTT MCCALL, HARRY RADOUSKY, VITALIJ PECHARSKY, GREGORY CARMAN
— A laminate of $Gd_5Si_2Ge_2$ and PZT-5H exhibiting the thermoelectric and magnetoelectric effects was manufactured. $Gd_5Si_2Ge_2$ exhibits a strain resulting from either a thermally or magnetically induced phase transformation while PZT-5H generates a voltage resulting from an applied strain. Mechanically coupling the two phases by lamination gives rise to the thermoelectric and magnetoelectric effects. Thermoelectric properties were investigated by thermally cycling the laminate from 260K to 300K under a series of constant magnetic fields from 0T to 9T. Magnetoelectric properties were investigated by isothermally cycling the laminate in magnetic fields varying from 0T to 9T at 260K, 280K and 300K.

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